

REMARKS

Claims 49 and 50 have been canceled herein in accord with the restriction and election.

Claims 31-48 are presented for examination.

Claims 36-37 and 42-45 stand rejected under 35 USC 112, second paragraph.

Claims 31-32, 36, 38-39, and 48 stand rejected under 35 USC 102 as being anticipated by Qureshi (US 5190598).

Claims 31-32, 35, 38-39, and 46 stand rejected under 35 USC 102 as being anticipated by, or in the alternative, under 35 USC 103 as being unpatentable over Gedwill (US 4446199).

Claims 31-34, 36-43, and 46-48 stand rejected under 35 USC 103 as being unpatentable over Albrecht (US 4405284) in view of Rigney (US 5350599), in further view of Hasz (US 6302318).

*Applicant's Response to 35 USC 112, Second Paragraph, Rejections*

Applicant has amended claim 31 to correct the deficiency. Applicant has amended claim 44 to correct the dependency. Applicant respectfully requests the 35 USC 112, second paragraph, rejections of claims 31-32, and 42-45, be withdrawn.

*Applicant's Response to 35 USC 102 Rejections*

Qureshi teaches

During this elevated temperature, the boron diffuses into the substrate steel of the component forming an boride coating **consisting of** iron boride and chromium boride **intermetallic compounds** on the steel substrate. (Column 1, lines 49-53).

In contrast, Applicant's independent claim 31 requires "a **ceramic** thermal barrier coating." The Qureshi boride coating is an **intermetallic** compound which does not teach Applicant's **ceramic** thermal barrier coating. Therefore, Qureshi does not teach all the limitations of independent claim 31 and can not support an anticipation rejection. Applicant respectfully requests the 35 USC 102 rejection of claim 31, and claims 32, 36, 38-39, and 48 based upon Qureshi be withdrawn.

*Applicant's Response to 35 USC 102/103 Rejections*

Regarding the 35 USC 102 and 103 rejections, Gedwill teaches “According to the present invention a substrate is coated with a base coating of an oxide dispersed, **metallic alloy** (cermet).” (Column 2, lines 13-15). In contrast, in independent claim 31 Applicant claims “**a ceramic thermal barrier coating applied to the base component.**” Gedwill’s metallic alloy does not teach or suggest Applicant’s ceramic TBC. This eliminates Gedwill as a proper reference under both 35 USC 102 and 103, and Applicant respectfully requests the 35 USC 102 and 103 rejections of claim 31, and claims 32, 35, 38-39, and 46 based on Gedwill be withdrawn.

*Applicant's Response to 35 USC 103 Rejections*

Claims 31-34, 36-43, and 46-48 are rejected in view of the combination of Albrecht, Rigney and Hasz.

Albrecht teaches “It is a broad object of the present invention to provide a casing for a thermal turbomachine having a ceramic heat insulation liner such that it affords excellent heat insulation plus optimal **abradable** capacity.” (Column 1, lines 23-26). Albrecht also teaches “**a porous** predominantly metallic top layer forming an abradable coating.” (Column 1, lines 33-34). The abradable liner of the casing in Albrecht is designed to yield to a rotor that contacts it, in order to maintain a proper seal between the two, and minimize wear on the rotor, which has a relatively harder surface. (Column 1, lines 17-22; 34-40). Thus, in order for Albrecht to operate as intended, the coating must be porous and abradable.

Examiner asserts that Rigney teaches a top sublayer that is less porous than the layer upon which it is formed. Examiner proposes to modify the abradable top coating of Albrecht by ensuring that the top coating is less porous than the layer upon which it is formed in order to provide an erosion layer that is more **erosion resistant**. (Page 6). The Examiner appears to be equating abradability with erosion resistance, but they are really opposites. Abradability requires a relatively soft porous material, whereas erosion resistance requires a relatively hard solid material. The proposed modification of Albrecht would result in the top surface being non-porous and therefore not being abradable. This would render Albrecht unsatisfactory for its intended purpose, so there is no motivation to make such modification, and thus it is impermissible per MPEP 2143.01(V). The tertiary reference to Hasz does not rectify this deficiency in the original combination. Therefore, Applicant respectfully requests the 35 USC

Serial No. 10/582,604  
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103 rejection of independent claims 31-34, 36-43, and 46-48 based upon the combination of Albrecht, Rigney and Hasz be withdrawn.

Conclusion

Applicants respectfully request allowance of the present claims. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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By:   
Ye Ren  
Registration No. 62,344  
(407) 736-6844

Siemens Corporation  
Intellectual Property Department  
170 Wood Avenue South  
Iselin, New Jersey 08830